PATENT
PF000039

REMARKS

In the Office Action, the Examiner noted that claims 1-10 are pending in the application. The Examiner further noted that claims 7-9 are objected to and that claims 1-6 and 10 are rejected. By this response, all claims continue unamended.

In view of the amendments to the Applicant's Specification presented above and the following discussion, the Applicant respectfully submits that none of the claims are anticipated under the provisions of 35 U.S.C. § 102. Thus the Applicant believes that all of these claims and the application are now in allowable form.

Rejections

A. 35 U.S.C. § 102

The Examiner rejected claims 1-6 and 10 under 35 U.S.C. § 102(e) as being anticipated by Matsumura et al. (U.S. Patent No. 6,751,400 B1, hereinafter "Matsumura"). The rejection is respectfully traversed.

Regarding claim 1, the Examiner alleges the Matsumura discloses a method for decoding compressed video pictures in a video decoding device including all of the aspects of the Applicant's invention. Specifically, the Examiner alleges that in column 8, lines 9-23, Matsumura teaches establishing an order of decoding pictures as claimed by the Applicant's claim 1. The Applicant respectfully disagrees.

"Anticipation requires the presence in a single prior art reference disclosure of <u>each and every element of the claimed invention</u>, <u>arranged</u> as in the claim" (<u>Lindemann Maschinenfabrik GmbH v. American Hoist & Derrik Co.</u>, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1983)). (emphasis added). The Applicant respectfully submits that Matsumura fails to teach each and every element of at least the Applicant's claim 1, which specifically recites:

> "Method for decoding compressed video pictures in a video decoding device comprising a random access source of coded video pictures, a video decoder and a plurality of reconstruction buffers for storing decoded pictures, said method comprising the steps of:
> **establishing an order of decoding pictures;**
> commanding said video decoder to decode a picture upon availability of a reconstruction buffer." (emphasis added).

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In support of at least claim 1, the Applicant in the specification specifically recites:

> "If the target picture (PicID) does not yet exist in the reconstruction buffers, then it needs to be decoded. If the picture identified by PicID is of 'P' or 'B' type, then its decoding may require the presence of forward and backward predictors. This information is available in the trickmode tables.
>
> The rule that gives the predictors on which a picture to be decoded depends on is simple: going through the stream backwards (i.e. towards video access units previously recorded), the first 'P' type or 'I' type picture encountered is the predictor for the current picture. This picture can be found using the trickmode information. This predictor is called 'NearestID' in figure 5.
>
> If the picture identified by PicID is a 'P' type picture, NearestID is a Forward Predeictor in the sense that the NearestID picture is located, in the time scale and display order, before the picture identified by PicID.
>
> If the picture identified by PicID is a 'B' type picture, NearestID is a Backward Predeictor. Then the Forward Predictor is found by looking further backwards for the next 'I' or 'P' type picture. This Forward predictor is called 'FarthestID' in figure 5.
>
> In order to decode a picture, if the reconstructed predictors do not exist in the reconstruction buffers, they have to be built. In this case, the DecodePicture command is recursively repeated for these pictures.
>
> Preceding the reconstruction of a B picture, up to two predictors may have to be decoded, unless already decoded and present in the reconstruction buffer. As can be seen in figure 5, FarthestID is decoded first, followed by NearestID. Since NearestID may also depend on FarthestID, the latter is decoded first: the process is thus optimized and a double decoding of the picture corresponding to FarthestID is avoided. For example, if a B picture is predicted from two P pictures, the second P picture in time depends on the first P picture.
>
> Once FarthestID is built into the reconstruction buffer, the buffer is locked to prevent the reconstruction process of NearestID to overwrite FarthestID, which is kept as a temporary result." (See Specification, page 11, line 30 through page 12, line 25).

As clearly evident from at least the portion of the Applicant's disclosure presented above, in the Applicant's invention it is explained in which order the images are selected to be decoded. In various embodiment of the Applicant's invention and as described above, the images are decoded in an order depending on their types "I, P or B" as their decoding depends on the other images for B or P types and thus the decoding is done according to this type. That is, the Applicant teaches and claims efficient decoding which depends on the inventive order described in the Applicant's Specification and not on a sequential order.

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Matsumura, however, teaches away from the invention of the Applicant. That is, in contrast to the invention of the Applicant, Matsumura teaches a process for decoding compressed video pictures in a video decoding device comprising a random source of coded video pictures, a video decoder and a plurality of reconstruction buffers for storing decoded pictures. The method of Matsumura, however, does not teach, suggest or anticipate a step of establishing an order of decoding the pictures as taught in the Applicant's Specification and as claimed by at least the Applicant's claim 1. Instead in the passage cited by the Examiner (column 8, lines 9-23), Matsumura specifically teaches that the pictures are sequentially decoded and stored in the frame memories. It is clear that there is no establishment of an order of decoding the images as taught in the Applicant's Specification and as claimed by at least the Applicant's claim 1. In contrast to the Applicant's invention, the images in Matsumura are decoded in a conventional order (i.e., a sequential order). That is, in Matsumura it is clearly mentioned that the images are decoded sequentially, not taking into account the predictors and thus the type of the image to be decoded. The images are sequentially decoded and stored in the buffer. Thus a higher number of buffers is required, five (5) in the cited example of Matsumura, whereas in the invention of the Applicant because of the claimed decoding order, only three (3) reconstruction buffers are required.

Furthermore, the Applicant submits that the claims must be taken in light of the Specification (the Applicant is his own lexicographer) and the limitation of the Applicant's claim 1 "establishing an order of decoding pictures" is clearly defined in the Applicant's Specification and must be afforded the defined meaning in at least the Applicant's claim 1.

Moreover, the Applicant respectfully submits that Matsumura fails to teach, suggest or anticipate "commanding said video decoder to decode a picture upon availability of a reconstruction buffer" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1. More specifically, in Matsumura, as taught in column 6, lines 23-38, "the non-vacant frame memories are sequentially overwritten, beginning from the frame memory storing a picture decoded first". As such, the decoding in Matsumura is not performed upon availability of a reconstruction buffer. Instead, in contrast to the invention of the

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Applicant as taught and claimed, in Matsumura decoding is performed without taking account of the reconstruction buffers. Even further, in Matsumura, the decoding can be discontinued during display, as taught in column 6 lines 34-38.

As such and for at least the reasons described above and specifically because Matsumura fails to teach, suggest or anticipate at least "establishing an order of decoding pictures" and "commanding said video decoder to decode a picture upon availability of a reconstruction buffer" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1, the Applicant respectfully submits that Matsumura fails to teach, suggest or disclose at least each and every element of the Applicant's claimed invention, arranged as in at least the Applicant's claim 1 as required for anticipation. Therefore, the Applicant respectfully submits that the teachings and disclosure of Matsumura do not anticipate the Applicant's invention, at least with respect to independent claim 1.

Therefore, the Applicant submits that for at least the reasons recited above independent claim 1 is not anticipated by the teachings of Matsumura and, as such, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Likewise, independent claim 10 recites similar relevant features as recited in the Applicant's independent claim 1. More specifically, claim 10 recites "means for selecting pictures to be decoded" and "means for monitoring the availability for write access of reconstruction buffers". In claim 10, the pictures to be decoded are selected by the means in the inventive order taught in the Applicant's Specification and the pictures are decoded upon availability of the reconstruction buffers. As described above, there is absolutely no teaching, suggestion or disclosure in Matsumura for "means for selecting pictures to be decoded" and "means for monitoring the availability for write access of reconstruction buffers" as claimed by the Applicant's claim 10. As such, the Applicant submits that for at least the reasons recited above independent claim 10 is also not anticipated by the teachings of Matsumura and also fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Furthermore, dependent claims 2-9, depend either directly or indirectly from independent claim 1 and recite additional features therefor. As such and for at

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least the reasons set forth herein, the Applicant submits that dependent claims 2-9 are also not anticipated by the teachings of Matsumura. Therefore the Applicant submits that dependent claims 2-9 also fully satisfy the requirements of 35 U.S.C. § 102 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

Conclusion

The Applicant would like to thank the Examiner for the indication of allowable subject matter, however, the Applicant submits that all of the Applicant's claims herein are patentable over the art cited by the Examiner. The Applicant, however, agrees with the Examiner that claims 7-9 are allowable over the cited prior art if written in independent form and including all of the limitation of the base claims and any intervening claims.

Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.
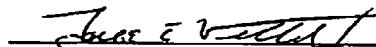
If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion, it is respectfully requested that the Examiner telephone the undersigned.

No fee is believed due. However, if a fee is due, please charge the additional fee to Deposit Account No. 07-0832.

Respectfully submitted,

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